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Chapter 1

Introduction

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Chapter 2

Statment of COVID-19 Problem Among People Native to Mexico, Central, and South America

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In early 2019, Coronavirus disease 2019 (COVID-19), a highly contagious upper respiratory viral infection, rapidly spread worldwide, disrupting workplace and educational arrangements, social routines, and consumer behaviors for everyone [IWRI, 2020; Trends, 2021; Mackenzie and Smith, 2020]. By March 11, 2020, when the World Health Organization declared this COVID-19 viral outbreak a pandemic, its effects had already amplified inequalities among the most vulnerable populations [Mackenzie and Smith, 2020]. Across the globe, demographic and geospatial analyses reported that those in the low-income sector and minorities exhibited worse risk for adverse COVID-19 outcomes [McNicholas and Poydock, 2020; IWRI, 2020; Karmakar et al., 2021]. Recent estimates report that the COVID-19 pandemic resulted in more than 6 million deaths worldwide, which were disproportionately concentrated among low-income communities and minority populations [Browne et al., 2009; Jæger and Blaabæk, 2020; Patel et al., 2020; Cascella et al., 2022]. Increased vulnerability for these communities was attributed to higher exposure to environmental pollutants and limited access to economic, social, and educational resources to mitigate pandemic hardships [Kakol et al., 2021; Grills et al., 2023].

In the United States, Native, Black, Asian, and People from Mexico, Central, and South America, among other minorities, endured a higher burden of infectious diseases and pandemic-induced hardships [Mackenzie and Smith, 2020; Vargas and Sanchez, 2020]. These communities were more likely to get infected or die from COVID-19-related complications [McWilliams et al., 2023; Wanzo, 2023; Karmakar et al., 2021; Vargas and Sanchez, 2020]. The Center for Disease Control (CDC) reported that American Indigenous Peoples (AIP) faced a higher risk for severe COVID-19 outcomes as compared to the mainstream population and other minorities [Kakol et al., 2020]. Among the AIP, People of Indigenous Latin American ancestry (PILA) [1] were among the most vulnerable to COVID-19 infection and related hardships [Curtice and Choo, 2020; Froehlich and Thornton-Marsh, 2020; Power et al., 2020; Rogers et al., 2020; Vargas and Sanchez, 2020]. Other groups also disproportionately affected by the pandemic included those with chronic health conditions [IWRI, 2020; Oh et al., 2023b], and individuals outside the mainstream binary gender spectrum, often referred to as LGBTQIA+ [Wirtz et al., 2023; Davis et al., 2022]. Pandemic collateral risk factors were identified for parents, caregivers [Powell et al., 2020; Vargas and Sanchez, 2020], and essential workers [Vargas and Sanchez, 2020; Van Houtven et al., 2020]. Individuals in geographically isolated areas or spending time in disease-prone areas face challenges securing timely pandemic-related resources; healthcare professionals and teachers, per the nature of their employment, faced a higher risk of COVID-19 exposure [Vargas and Sanchez, 2020; Credit, 2020; Van Houtven et al., 2020]. Elders, people with disabilities, and those at risk for violence-related interpersonal challenges also encounter collateral pandemic hardships [McWilliams et al., 2023; Oh et al., 2023a].

Extensive COVID-19 research has reported that worse infection and pandemic outcomes for the broader Hispanic population were exacerbated by their existent social hardships, such as exposure to environmental hazards, limited medical coverage, inadequate child care, gaps in educational services, and employment with limited or without benefits [Salas et al., 2012; Power et al., 2020]. Adverse pandemic outcomes for this population were unevenly distributed [Grills et al., 2023]. On average, many of these communities were more than twice as likely to get infected or die from COVID-19 than their counterparts [Vargas and Sanchez, 2020]. In some states, the disproportionate outcomes were more severe. For example, a study by the University of Southern California (USC) Department of Preventive Medicine revealed that in California, the chances of becoming infected with COVID-19 and dying from medical complications were eight times higher for those aged 20 to 54 from this cohort than for their white counterparts [Garcia et al., 2021]. This extreme pattern of uneven distribution of adverse COVID-19 outcomes among the Hispanic population was

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[1] The acronym PILA refers to people who descend from the pre-Hispanic Pueblos Originarios, including people from countries in Central and South America, and México, who are citizens and current residents of the United States.

not identified in the mainstream population [Garcia et al., 2021; Siegel et al., 2021].

Unfavorable COVID-19 outcomes for the Hispanic population, and especially for PILA, are not surprising [Vargas and Sanchez, 2020; Macias Gil et al., 2020], because in addition to facing pandemic stresses, these communities have historically contended with structural racial inequities [Estrada, 2009; Salas et al., 2012]. For example, they have continuously faced significant challenges accessing essential health care services [Alegría et al., 2007; Salas et al., 2012]. Large segments of this population reside in under-sourced neighborhoods with limited access to COVID-19 pertinent safety information and resources to prevent infection (e.g., masks, gloves, and disinfectants) and [Grills et al., 2023]. In general, people living in low-income communities also live in multi-generational households, which are often densely inhabited, limiting personal space, and compromising the ability to maintain adequate social distance [Powell et al., 2020; Vargas and Sanchez, 2020]. Workers from these neighborhoods are also overrepresented in the service industry, which bears the most significant exposure to environmental pollutants [Rogers et al., 2020; Van Houtven et al., 2020; McNicholas and Poydock, 2020].

An extensive body of epidemiological studies has demonstrated that chronic exposure to social adversity often results in worse physical, mental, and behavioral health outcomes [Benjet et al., 2010; Krieger, 2001]. When vulnerable individuals or communities encounter added stress levels, their ability to manage current physical, emotional, or psychological health problems can be compromised [Henry and Stephens, 2013; Nurius and Hoy-Ellis, 2013]. Individuals chronically burdened by social and environmental disadvantages often experience higher rates of chronic health problems, comorbidities, and emotional and psychological distress [Krieger et al., 2010; Evans-Campbell, 2008; Satcher, 2000]. In contrast, when people have adequate access to adequate resources, they tend to fare better when exposed to additional stress [Nurius and Hoy-Ellis, 2013; Henry and Stephens, 2013]. However, when environmental stresses surpass the resources available to cope with such hardships, the normative recovery from stress can be compromised or delayed [Nurius and Hoy-Ellis, 2013; Henry and Stephens, 2013; Talebreza-May, 2015].

During the pandemic, Hispanic communities reported decreased functioning, loss of income, and worse mental health outcomes [Power et al., 2020; Trends, 2021; Rogers et al., 2020; Vargas and Sanchez, 2020; Macias Gil et al., 2020]. Shifts in stress responses were also reported. For example, whereas some reported adapted strategies to deal with pandemic hardships (e.g., more time with family, nature walks, re-engaging with dormant traditions), others reported engagement or relapse in risky behaviors, such as drinking, using substances, becoming isolated, etc. [Walker et al., 2020; Vargas and Sanchez, 2020]. Epidemiological research has shown that maladaptive behavioral patterns, without supportive resources, could potentially elevate their chances for detrimental health outcomes [Nurius and Hoy-Ellis, 2013].

Understanding the vulnerabilities specific to PILA is increasingly urgent because the risks of infectious diseases associated with their health preconditions, socioeconomic disadvantage [Vargas and Sanchez, 2020], and marked health disparities [Alegría et al., 2007] puts them at a higher risk for contagion and pandemic-related consequences, including worsening pathology, environmental stress, and adverse economic impacts [Krieger et al., 2010; Grills et al., 2022; Estrada, 2009]. In addition to the socioeconomic challenges and insufficient access to medical care, these communities also exhibit some of the highest rates of obesity and diabetes in the country [Elena et al., 2019; Fernandez and Spencer, 2022]. Their elevated rates of blood pressure, heart disease, stroke, and liver disease have remained constant for several years now [Elena et al., 2019; Borges et al., 2007]. Considering the interplay between individual and community-level social determinants of health can help optimize emergency health response to curb the adverse impact of communicable diseases in the future.

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Chapter 3

Literature Review by Araceli Orozco Hershey

Comprehensive State of the Art Literature Review
by Araceli Orozco

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This comprehensive state-of-the-art literature review presents an in-depth examination of the existing literature on the risk and protective factors that have influenced COVID-19 outcomes and pandemic hardships among PILA (People of Indigenous Latin American Ancestry). It provides a comprehensive summary and synthesis of the current knowledge on COVID-19 literature related to this population, incorporating a review of contextual factors that have historically moderated their health outcomes. The review systematically evaluates the strengths, limitations, and methodological qualities employed in foundational studies upon which the health literature for this group is built. Additionally, it identifies gaps in current knowledge and highlights emerging trends or areas requiring further research. Moreover, the review offers a historical context to illustrate the evolution of research on the topic over time. It also introduces conceptual frameworks to facilitate a comprehensive discussion of the reviewed literature and to interpret the findings.

3.1 Population Demographics

This section presents the shared social history and demographic characteristics among the second largest minority group in the United States (U.S.) and the largest subgroup within the Hispanic-Latinx population, “`People of Indigenous Latin American Ancestry (PILA)`.” This pan-ethnic group includes people who trace their roots to Mexico, Central America, and South America. The acronym ‘‘PILA”[1] will be used here to complement the Hispanic-Latinx category and as an alternative to the label introduced by the U.S. Census to classify people with Hispanic and Indigenous ancestry, *Hispanic-Indigenous*. The rationale for reclassifying these Latin American communities from Hispanic to PILA is to fight against Indigenous erasure by reinforcing their root identity and detaching semantically from the language, culture, and identity of the colonizers. Moreover, this term also delimits the population under study by removing people from Spain, which accounts for 1% of the Hispanic population, and people from the Caribean, who account for 5% of this group, since these communities are not representative of the sample under study.

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[1] PILA is pronounced in Spanish as ṕila’ /‘peela’ means `source of power.`

3.1.1 Race

The pan-ethnic population comprised of people of Mexico (11%), Central, and South America (3%) in the United States is this country's second-largest, youngest, and most diverse minority group, and they also make up the largest workforce [Curiel, 2023; Lopez et al., 2013; Fernandez et al., 2023; Escamilla et al., 2023; Borjas and Katz, 2007]. Altogether, they make up 14% of the population [Stepler and Brown, 2016; Harris, 2021], and by 2060, they are expected to account for almost one quarter (23.6%) of the people in this nation [Velasco-Mondragon et al., 2016; Harris, 2021; Stepler and Brown, 2016]. Officially, the population of Latin American descent has been classified under the Hispanic-Latino census category, the largest minority in the United States. This Hispanic group also includes 5% of people from the Caribbean and only 1% from Spain [Jones, 2017]. Altogether, the nations in the Hispanic group make up almost one-fifth (19%) of the population [U.S. Census Bureau, 2021]. In 2008, it was projected that by 2050, they would make up 29% of the population [Passel and Cohn, 2008]. However, demographic experts argue that these figures may be underestimated due to challenges accounting for some cohorts within this population [citation].

3.1.2 Age

People tracing their roots to México, Central, and South America are the youngest population in this country. They are significantly younger than their Hispanic counterparts and the mainstream population [Gonzalez-Barrera and Lopez, 2013]. The median age of people of Latin American descent is 27 years [Stepler and Brown, 2016], compared to the average age of the Hispanic group, 30 years old [Passel and Cohn, 2008], and that of the Caucasian people, which is 44 years old [Schaeffer, 2019]. Currently, one in every four children in this country is classified as "Hispanic-Latino" [Flores, 2017], and over 70% of these children trace their ancestry to México [Flores, 2017; Murphey et al., 2014].

3.1.3 Ethnicity

People of Indigenous Latin American ancestry is the most diverse minority group in this country. This group includes approximately 500 Native and Mixed-Native communities from México, Central and South America [Eisenstadt, 2011]. Mexico alone hosts 68 distinct Native communities, also known as *Pueblos Originarios* [Eisenstadt, 2011; INEGi, 2001]. The Native population in Mexico represents the largest community of *Pueblos Originarios* across the American continent [INEGi, 2001; Stavenhagen, 2010; Eisenstadt, 2011]. Major Native Mexican groups include Purepecha, Nahua, Mixtec [Ortiz, 2014], Zapotec, Otomi [Fox and Rivera-Salgado, 2004; Aguilar et al.], Tarahumara [Arrieta, 1984] and Huichol [Wiegand and Fikes, 2004]. The largest Native group in Mexico is comprised of the Nahua pueblos, mainly concentrated in 10 federal states around Central and East Golf of Mexico [Sandoval Forero, 2002]. Among these Pueblos, there are almost 1.5 Nahuatl speakers aged five and older [Sandoval Forero, 2002; Granados Alcantar and Quezada Ramírez, 2018]. The majority (67.2%) of Nahualt speakers live in three federal zones: Puebla (28.7%), Veracruz (23.2%), and Hidalgo (15.3%) [Sandoval Forero, 2002].

3.1.4 Workforce

People tracing their roots to México, Central, and South America, along with other groups in the Hispanic population, are the youngest and largest workforce in this country [Borjas and Katz, 2007]. Business people and economists argue that the Hispanic workforce, composed mainly of Mexican, Central, and South American people, play a critical role in ensuring the economic health of this country [Borjas and Katz, 2007]. For example, in 2015, these workers accounted for one out of every three agriculture workers in the United

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States, more than one in four workers in the construction industry, and more than one out of every seven workers of the country's entrepreneurs [Gillula, 2015; Borjas and Katz, 2007]. According to the Bureau of Labor Statistics [Statistics, 2015], the labor force participation rate for the Hispanic/Latino group in the last decade (2010s) was the highest in the country, with a 68.5% participation rate, compared to 63.7 % by workers of African American descent, and 67% for Asian Pacific Islanders, and 66.3% for Caucasian population [Borjas and Katz, 2007; Statistics, 2015]. It is expected that in 2034, Hispanic employment will rise to 23% from 16% of U.S. employment documented in 2014 [Gillula, 2015].

Among the PILA workforce, and related groups, men have the highest labor force participation rates, and women, the lowest [Gillula, 2015]. Some scholars argue that male workers' high labor force participation rate, in part, reflects their age structure. Since they are the youngest population, a sector that typically has the greater participation in the labor force [Gillula, 2015].

Although PILA and related groups have the highest levels of participation in the workforce across all groups, and many of them now occupy jobs in settings where they were previously underrepresented, fewer have achieved higher-level positions within their companies Borjas and Katz [2007]; Glenn and Tam [2004]. The proportion of these workers in higher level positions is not significant, a figure has remained constant for many decades [Borjas and Katz, 2007; Statistics, 2015]. Meanwhile, PILA workers are over-represented in the essential worker industry [Van Houtven et al., 2020; Vargas and Sanchez, 2020]. These workers are responsible for maintaining the service industry, and due to the nature of this work, many run a higher risk of exposure to environmental pollutants. However, their employment does not always provide safe working conditions or guarantee an adequate standard of living [Fernandez, 2019; Ortiz, 2014; Zúñiga et al., 2013].

3.1.5 Immigration

In 2021, people from Mexico, Guatemala, Honduras, and Venezuela, along with other Hispanic groups, accounted for the largest group of immigrants in the United States [Haner and Lopez, 2023]. In this year, 44% of U.S. immigrants reported having Hispanic or Latino ethnic origins [Haner and Lopez, 2023]. The large majority of this group were foreign-born individuals of Latin American descent; these immigrants constituted nearly one-third (31.8%) of the total Hispanic-Latino population [Haner and Lopez, 2023]. Among these immigrants, Mexican people comprised the largest group, they make up (54%) of all Hispanic immigrants and 24% of the total immigrant population, which represented a decline from 30% in 2000 [Haner and Lopez, 2023]. Immigrants from El Salvador accounted for 3%, and people from Guatemala made up 2% of these immigrants. During the same period, the Venezuelan immigrant population increased by the fastest rate between 2010 and 2021 (by 196 percent).

People of Mexican descent comprise 11% of the entire U.S. population and over 65% of the broader Hispanic group [Stepler and Brown, 2016; Velasco-Mondragon et al., 2016]. In fact, the United States is home to the largest Mexican community outside of Mexico [Gonzalez-Barrera and Lopez, 2013]. The U.S. Census Bureau reveals that the demographic composition of immigrants to the United States is shifting. This shift represents differences in country of origin and ethnicities. Over the past two decades, one population that has grown significantly includes people from Native communities across Latin America who have been migrating in large numbers to the United States for the first time [Norris et al., 2012; Zúñiga et al., 2013; Fernandez, 2019]. This migratory trend led to the refinement of census categories; now, there is a category for those who identify as "Hispanic-Indigenous." Since this census category was added in 2000, this Native American subgroup has experienced remarkable growth, making the fourth-largest Native American cohort in the country [Norris et al., 2012; Fernandez, 2019].

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3.1.6 Socio Economic Status

PILA, despite having the strongest participation in the workforce, has lagged behind economically, with an estimated poverty rate between 24% and 28 % [Semega et al., 2017; Handal et al., 2023; Escamilla et al., 2023], a figure that is similar to the proportion of American Indigenous Alaskan Native (AIAN) people [Semega et al., 2017; Velasco-Mondragon et al., 2016]. Poverty rates among the PILA and related Hispanic groups are unevenly distributed across the country.

3.1.7 Poverty Among PILA: A Geographical Distribution

Although PILA has one of the highest levels of participation in the workforce across all groups [Borjas and Katz, 2007], they have lagged behind economically, with an estimated poverty rate between 24 and 28 % [Fernandez et al., 2023; Semega et al., 2017; Grills et al., 2022], a figure that is similar to the proportion of American Indigenous Alaskan Native (AIAN) people [Fernandez, 2019; Semega et al., 2017].

3.1.8 Language

A total of 9.2% of individuals aged five and older from Mexico, Central, and South America, as well as other segments within the Hispanic population, speak only Spanish within their households [Flores, 2017]. Across all US-born people, 58% indicate using Spanish in their homes [Gillula, 2015].

Bilingual research shows those who speak more than one language may have an advantage in certain tasks. This is known as the "bilingual advantage" [Olulade et al., 2015]. The bilingual advantage refers to an improvement of cognitive functions resulting from choosing which language to use and suppressing the non-target language [Olulade et al., 2015]. Some scholars argue that this advantage is not limited to language tasks but also extends to non-verbal tasks like attention shifting and conflict resolution [Olulade et al., 2015]. However, this research has yielded some mixed-findings. Some studies show that bilinguals perform better on certain tasks, while others do not [Olulade et al., 2015]. The type of task used in the study may play a role in these inconsistencies [Olulade et al., 2015]. To explore this controversy, a recent study took a different approach. Instead of focusing on specific tasks, the researchers measured and compared the volume of gray matter in the brains of bilingual and monolingual adults [Olulade et al., 2015]. Gray matter volume can indicate changes in the brain due to cognitive control. The study aimed to see if bilinguals, particularly those who learned both languages early in life, show differences in brain structure. The study also considered whether constantly deciding which language to use is the key factor in the bilingual advantage. This study found evidence indicating that the constant language selection might be the source of the advantage. The research also considered factors like cultural differences and socioeconomic status. It was found that the bilingual advantage is present across different cultures and socioeconomic backgrounds [Olulade et al., 2015].

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3.1.9 Insurance and Access to Health

3.2 Contribution and Resilience

Despite their economic challenges, PILA has contributed significantly to the economy of this country. Nationwide, their households are estimated to contribute $139 billion in federal taxes and almost $76 billion in state and local taxes; in total, they pay $215 billion in taxes each year [of Economic Advisers , US].

3.2.1 Education

The average level of education across the Hispanic groups is relatively low to the mainstream population, with an approximately 12% to 16% of people 25 years and older having a bachelor's degree, a figure lower, a figure lower than the mainstream population and other ethnic groups [Noe-Bustamante et al., 2019; Curiel, 2023]. However, the level of education across the subgroups within this multinational category varies widely. [qp notes]

3.3 Structural and Cumulative Vulnerabilities: A Colonial Legacy

For many decades, health research has shown that immigrant populations from Latin America, especially those without approved legal status, are structurally vulnerable to adverse health outcomes [Zúñiga et al., 2013; Fox and Rivera-Salgado, 2004; Fernandez et al., 2023; El-Shaarawi and Larchanché, 2022]. On average, their households have less wealth and lower incomes than any other minority group [Fox and Rivera-Salgado, 2004]. These communities are also more segregated than any other group [Zúñiga et al., 2013; Talebreza-May, 2015]. The social determinants of health perspective supports this claim, indicating that cumulative exposure to environmental and social adversity is a risk factor for worse health outcomes [Krieger et al., 2010], and a form of structural violence [El-Shaarawi and Larchanché, 2022].

Studies addressing health outcomes for Latin American immigrants advocate for considering the impact of the social, political, and economic production of distress and disease on marginalized populations [El-Shaarawi and Larchanché, 2022; Estrada, 2009; Evans-Campbell, 2008; Brave Heart et al., 2011; Fernandez et al., 2023]. Similarly, this research argues that a close review of the social determinants of health accessible to these communities must be examined to identify structures and dynamics that worsen health inequities through policies of access, quality of care, and service delivery [Estrada, 2009; Talebreza-May, 2015; Glenn and Tam, 2004]

In the United States, Native communities from Mexico and Central and South America have historically been underrepresented in the lowest socioeconomic sector [Fernandez et al., 2020; Stepler and Brown, 2016; pew]. Extensive research has consistently reported that they have limited or no access to official healthcare systems or health insurance [Grills et al., 2023; Satcher, 2000], their labor is often undervalued [Massey, 1993; Glenn and Tam, 2004; Zúñiga et al., 2013], and the educational system rarely provides a culturally responsive curriculum for these communities [Ayón, 2015; Gamoran, 2001]. On average, there is a scarcity of health researchers and providers trained to address the needs of these communities [citation]. A gap in training often results from limited training in the historical and cultural background of their traditional health systems, beliefs, and practices [Kindig and Stoddart, 2003]. This problem is understandable because the diversity within the minority populations is multifaceted. [insert heterogeneity -mixed findings]

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3.3.1 Contextual Health Factors Among Migrant and Immigrant Communities

Individuals and families relocating from Latin America to the United States are highly diverse [Borjas and Katz, 2007; Borrell and Lancet, 2012; Servan-Mori et al., 2014; Zúñiga et al., 2013]. This diversity can observed in their mother languages, cultural, religious, and health traditions, as well as their legal status, socio-political experiences, and motivations to leave their countries [Eisenstadt, 2011; El-Shaarawi and Larchanché, 2022; Van der Haar, 2005]. Perhaps one higher distinction among foreign-born Latin American communities is the type and quality of their migratory journey. These communities are generally portrayed as migrants or immigrants [Deren et al., 2005; Zúñiga et al., 2013].

For migrants, the relocation to the host society can be temporary or permanent, and the variability in the intention for relocating can be substantial [Zúñiga et al., 2013]. Whereas some might migrate to seek better jobs and educational opportunities for themselves or their families, others migrate to seek refuge from political violence or war [Silver, 2014; Fox and Rivera-Salgado, 2004]. When traveling internationally, some migrants may not hold legal status, and their journey may expose them to hazardous, severe experiences [Zúñiga et al., 2013; Silver, 2014]. Some migrants travel with their families, and others leave part of their nuclear families behind, opening a portal of dual awareness that spans geographical distances [Hondagneu-Sotelo and Avila, 1997]. In contrast, immigrants traveling across borders often hold a legal status to enter the country (e.g., visas, residence permits, citizenship) because, in general, they travel to establish permanent residence in the new government to become a part of the host society [citation]. There is another group that, by the nature of their entry into and exit of the United States, can be understood as "flexible and transient immigrants." For example, those living near the Southern border. These individuals have a current legal status but may enter and exit the country daily or weekly [Chávez, 2016]. These fluid immigrant workers take advantage of both worlds: better wages and work-related opportunities in the United States and better living conditions in Mexico, such as affordable housing, quality, comprehensive, culturally attuned healthcare services, and political representation, among other social goods [Chávez, 2016].

For many communities of foreign-born individuals from Latin America, the variability among their baseline experiences before arrival to this country can be substantial. Despite these differences, many of them, regardless of their backgrounds and baseline conditions, may hold similar traits regarding life satisfaction, health conditions, and intrinsic and material resources [McAdams and Zapata-Gietl, 2015]. However, their immigration journey, immigration status, and life conditions in host societies intersect, shaping their living standard and immediate needs upon arrival [Tienda and Sánchez, 2013; Holmes et al., 2021].

In contrast, migrants who may come from the central or South Mexican region of Mexico or Central And South America may encounter harsher travel conditions [Chavez et al., 1992; Tienda and Sánchez, 2013; Perez et al., 2016]; additionally, those who flee violence or persecution may be at higher risk of physical and mental health problems, especially if they already have untreated preconditions [Fortuna et al., 2008; Van der Haar, 2005; Eisenstadt, 2011; Keller et al., 2017].

Researchers who advocate for differentiation between Hispanic subgroups argue that generalizing findings across all groups within this broad category obfuscates the characteristics and needs of large national and ethnic populations in the United States by combining immigrant and nonimmigrant populations and other subgroups with different characteristics, including cultural backgrounds, migration experiences, and risk behaviors [Deren et al., 2005]. This research advocates for recruiting or identifying hidden samples and paying attention to the validity of data by ensuring steps to ensure comparability of meaning across the subgroups, especially when studying migrant and immigrant populations.

The literature on immigrant and migrant health within the broader Hispanic population is somewhat

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divided, while numerous studies have documented adverse health outcomes among communities who trace their origins to Latin America [Torres and Wallace, 2013; Kirchner and Patiño, 2011; Mendenhall, 2016], others have reported similar or better health status for some of these communities, especially for those of Mexican descent [Alegría et al., 2007; Palloni and Arias, 2004; Gonnering and Riley, 2017]. The body of work comparing health outcomes among these diverse communities is growing quickly, especially after the disaggregation literature took momentum in health sciences research [Kirchner and Patiño, 2011; Beltrán-Sánchez et al., 2016; Murillo, 2022; Ai et al., 2017; Shor et al., 2017; Grills et al., 2023; Palloni and Arias, 2004]. These comparative studies consider cultural, socio-political, economic, educational, and geographic differences among migrant communities. However, health literature that provides a sound understanding of the historical predispositions of these communities, along with an overview of their traditional health beliefs and systems of care in the context of contemporary healthcare services, is yet to emerge for these communities. Pioneers of historical health research have documented these findings for AIAN populations, see [Walters and Simoni, 2002; Evans-Campbell, 2008; Duran and Duran, 1995; Brave Heart, 1998].

3.4 COVID-19 Pandemic: Risk and Protective Factors

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The pandemic has introduced new stressors in the general population, and it has exacerbated stressors that were already present in historically marginalized communities [Bradbury-Jones and Isham, 2020; Hughes et al., 2020]. PILA have been especially affected by this global crisis, which has also burdened their transnational families and social networks [Hondagneu-Sotelo and Avila, 1997; Moyce et al., 2020; Silver, 2014; Vargas and Sanchez, 2020]. Many people within these communities may also grapple with illness and death of loved ones, not only in the United States but also in their countries of origin [Figueroa et al., 2020; Kim et al., 2020; Moyce et al., 2020; Vargas and Sanchez, 2020]. The pandemic stresses are worsening health inequities among PILA plus, including limited access to health care services [Alegria, 2000], diminishing earning power [Glenn and Tam, 2004], hazardous environmental conditions [Massey et al., 2021], as well as unsafe work conditions [Borjas and Katz, 2007; Zúñiga et al., 2013] and sub-optimal educational services [Gamoran, 2001; Gurrola et al., 2016].

PILA have higher rates of COVID19-infection, related illness, and mortality than most ethnic groups. A recent study compared COVID-19 outcomes by zip code level in Chicago and New York, and found that Hispanic neighborhoods, where the majority of PILA plus reside, have significantly higher infection rates than the mainstream population [Credit, 2020]. This and related studies have reported that PILA are at least two times more likely to get infected than their non-white counterparts [Macias Gil et al., 2020; Sáenz and Garcia, 2021; Trends, 2021; Hughes et al., 2020]. However, a recent national survey found that in some regions, PILA plus are up to eight times more likely to contract COVID-19 than White Americans [Grills et al., 2022]. In general, inequities specific to COVID-19 are especially salient in states (or territories) heavily populated by PILA plus. Their neighborhoods have significantly lower testing rates than other racial/ethnic groups and higher infection rates [Credit, 2020]. Related research also reports that PILA plus are reporting countless pandemic-related losses, such as loss of wages, employment [Hughes et al., 2020; Kakol et al., 2020], and impaired access to basic services and social networks [Burki, 2021; Patel et al., 2020; Grills et al., 2022].

Inequality. Although PILA plus make-up close to 20% of the total population, 28 % of them are economically disadvantaged [Flores, 2017; Grills et al., 2022]. In 2019, they were approximately 1.5 times more likely to live in poverty than the general population [Income, 2017]. In general, PILA from low socioeconomic backgrounds live in neighborhoods that are often designated as “food deserts” or “hotspots,” which means that they have none or limited access to fresh food and running water, transportation, recreational facilities [Salas et al., 2012; Grills et al., 2022] and other factors that facilitate communicable diseases and infections [Grills et al., 2022; Kakol et al., 2020].

Inadequate access to resources is not their main obstacle when it comes to disproportionate negative COVID-19 outcomes. Many people within these communities also grapple with occupational and environmental hazards [Valdez, 2001]. Their neighborhoods often exhibit higher levels of contaminants in the environment, including toxic materials, community violence, and discrimination [Servan-Mori et al., 2014; Zúñiga et al., 2013]. PILA plus are over-represented in low-paying jobs, such occupations associated with higher exposure to environmental pollutants, unsafe conditions, limited or nonexistent health benefits, and little opportunities for career advancement [Borjas and Katz, 2007].

The most vulnerable to COVID-19 infection and related hardships among PILA are people with serious health conditions, the uninsured [Grills et al., 2022], those living in communities with high rates of crime [Hughes et al., 2020], and those sheltering at home with an abusive partner, especially elders, women, children [Bettinger-Lopez and Bro, 2020; Bradbury-Jones and Isham, 2020; Cleaveland and Waslin, 2021]. National reports indicate that at least 20% of PILA lack health insurance coverage [Nelson, 2002; Alegría et al., 2007; Salas et al., 2012]. Parents and caregivers are also facing harsher pandemic-related hardships, the disruption of daily routines such as in-person work, education, and care for family members [Powell et al., 2020]. , along with the safety measures used to curb the spread of the virus (e.g., social distancing) [Center et al., 2020; Cooper et al., 2021].

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Group-Level

Essential Workers. Essential workers bear the highest exposure to infection due to the in-person nature of their work (e.g., grocery store staff, restaurant workers, caretakers, cleaners, and delivery workers); essential workers are those who conduct a range of operations and services that are typically essential to continue critical infrastructure operations, encompassing sectors from energy to defense to agriculture [Dubay et al., 2020; **?**]. Recent population estimates indicate that PILA plus account for over 28% to 31% of essential workers in the country [Grills et al., 2022]. A recent study [Grills et al., 2022] reported that the percentage of essential workers in their national sample of PILA (41%) was higher than the national average (30%). This study reported that approximately 40% of these workers were employed in the food industry, agriculture sector [McNicholas and Poydock, 2020; Galdamez et al., 2021; Rogers et al., 2020], or industrial, commercial, and residential facilities Grills et al. [2022]. It also reported that only 38% of them had access to health coverage [Galdamez et al., 2021; Rogers et al., 2020], 40% had reduced access to medical care during the COVID-19 pandemic, and 28% indicated they and/or someone in their household unit were unable to access any medical care for a serious condition during the same period [Grills et al., 2022]. Moreover, over two-thirds (67%) of these workers indicated that they, or members of their household, had to continue working despite having close contact with people who were potentially infected with the COVID-19 virus [Grills et al., 2022].

Individual-Level

Lockdown: Safety Measure or Risk Factor? The safety measures put in place to curb the effect of the pandemic, such as lockdown and social distancing, have resulted in collateral challenges among the most vulnerable [Bradbury-Jones and Isham, 2020]. Lockdown measures required that people stayed at home, leaving it only for essential reasons, such as buying food, collecting medication, or working, if they were unable to work from home [Bradbury-Jones and Isham, 2020]. For many, closures of schools, businesses, and other social welfare agencies, loss of wages led to an increased sense of social and economic vulnerability, as manifested by isolation and loneliness, anxiety and depression, food insecurity, and increased stress-related conflict among people and communities that were already affected by social and economic hardships [Bradbury-Jones and Isham, 2020; Hawes et al., 2021; Moyce et al., 2020; McKnight-Eily et al., 2021; Powell et al., 2020]. Whereas these social distancing measures were implemented to delayed the peak of COVID19 infection and related medical complications; they led to an increased rate of interpersonal violence among vulnerable communities [Bradbury-Jones and Isham, 2020].

Domestic Violence, Child Abuse & Elder Neglect. As communities around the world went into lockdown to curb the spread of the virus and to delay its peak, efforts to protect the elderly, women, and children from abusive relationships were compromised [Bradbury-Jones and Isham, 2020]. Whereas for many, home can be a refugee and safety from environmental stresses, for others, home can be a place of increased danger and vulnerability, especially when the household unit includes abusive figures. Because, there is no scrutiny from anyone outside power at home is often subverted by violent perpetrators [Bradbury-Jones and Isham, 2020]. When governments across the globe imposed lockdown periods, several countries saw a rise in cases of domestic violence (DV), elder neglect, and child abuse [Bradbury-Jones and Isham, 2020]. For example, some regions of Spain reported an increase from 20% to 30% in phone calls to its DV helpline soon after the period of social restriction began; around the same period, a leading domestic abuse organization in the United Kingdom reported a 25% increase in calls to the UK Domestic Violence Helpline [Bradbury-Jones and Isham, 2020].

Risk factors associated with child abuse and exposure to DV include parental unemployment, financial or parenting stress, substance abuse, mental illness, poor health, and lower educational level. Emotional consequences of child abuse and children's exposure to DV include a heightened sense of isolation, shame, fear, guilt, and low self-esteem [Herrenkohl et al., 2008]. Psychological consequences include post-traumatic stress disorder, anxiety, and depression [Herrenkohl et al., 2008]. Behavioral consequences include school dropout, delinquency, violence, eating disorders, teen pregnancy, suicide attempts and ideation, and substance use [Herrenkohl et al., 2008]. Relational consequences include attachment issues, ineffective conflict resolution skills, and vulnerability to further victimization or perpetration of violence [Herrenkohl et al., 2008].

As the COVID-19 virus and its variants continue to spread around the world, the unintended and adverse consequences of safety measures are affecting families by adding multiple new stresses or exacerbating those stresses already in the lives of the most vulnerable families Bradbury-Jones and Isham [2020]; Powell et al. [2020]. In this context, children and their mothers are particularly vulnerable to the consequences of stress-related outcomes, such as DV Bradbury-Jones and Isham [2020], child abuse Herrenkohl et al. [2008] and socioeconomic burdens, such as food insecurity. Children exposed to DV in their households are often subjected to child abuse and other environmental stressors Herrenkohl et al. [2008].

Substance Use: Alcohol & Smoking Several studies have reported increased levels of alcohol intake during the COVID19 pandemic [Czeisler et al., 2020; Walker et al., 2020; Ahmed et al., 2020]. The increased intake of potentially harmful substances is problematic in the general population, and especially so in those with chronic illness, mental health problems, elevated stress levels, and disadvantaged social conditions. Historically, major health crises have led to an increased use of alcohol and tobacco to mitigate stress, emotional and psychological afflictions resulting from adverse environmental conditions [Walker et al., 2020]. Since the onset of the pandemic, many people are drinking more frequently and in greater quantities [Czeisler et al., 2020; Walker et al., 2020]. For example, in China, higher levels of hazardous and

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harmful drinking were found around the outbreak's epicenter than in other regions; these levels were also higher than those reported in previous epidemiological surveys [Ahmed et al., 2020; Walker et al., 2020]. In the United States, alcohol sales have increased more than 50%, since the pandemic -despite widespread closure of bars and restaurants [Micallef, 2020; Walker et al., 2020].

Prior to the pandemic onset, studies using a nationally representative sample of PILA, reported that males, migrant immigrants, and those born in the United States exhibited higher rates of drinking problems than their counterparts [Estrada, 2009]. Increased use of substances among PILA is a matter of serious concern, because alcoholism is already a significant problem for this population [Zúñiga et al., 2013]. Excessive alcohol consumption significantly lowers an individual's health defenses, predisposing chronic drinkers to a myriad of health problems, such as infections and systemic inflammation. As it relates to COVID-19 infection, this precondition (alcohol abuse/dependence) is concerning because its prognosis is lung damage, which can lead to more severe lung diseases in drinkers than in nondrinkers [Sarkar et al., 2015]. In general, alcohol use has been linked to weakened immune functioning [Sarkar et al., 2015; Walker et al., 2020] and higher cardiovascular conditions; both conditions are known to increase the severity of COVID-19 infection, related complications, and mortality [Walker et al., 2020].

Smoking and vaping inhaled nicotine products is known to compromise the respiratory system, potentially increasing susceptibility to COVID-19 and worsening upper respiratory infections for those suffering from COVID-19–related medical problems [Volkow, 2020; Walker et al., 2020]. The misuse of substances, such as alcohol and inhaled nicotine products, presents a serious risk for COVID-19 infection or related medical complications and mortality. During the pandemic, the entertainment industry and social media have been sending images and messages about how using substance use is an acceptable and effective way to cope with pandemic-related stressors; these kinds of messages have normalized the use of substances during trying times [DiClemente et al., 2021; MacMillan et al., 2021; Walker et al., 2020]. Whereas the consumption of substances can often lead to a sense of wellness and/or temporary relief from distress, substance use can also exacerbate mental health problems and interfere with recovery from stressful events Boden and Fergusson [2011]. Individuals with histories of cumulative stress and/or trauma histories may have heightened risk for substance use during crises Khantzian [1997], such as the current pandemic Walker et al. [2020]. These individuals are among the most vulnerable for severe COVID19 outcomes.

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3.4.1 Protective Factors

As the stark socioeconomic and health inequities triggered by the pandemic become more visible in communities of PILA, public health officials are more motivated to curb the spread of this viral infection and to find ways to streamlight its treatment. In order to make meaningful progress toward this goal, in addition to understanding the COVID19 impacts on the health outcomes of PILA, they also have to understand the factors that enhance their well-being.

The PILA have a rich history of health traditions, which have been transmitted and practiced in their communities, generation after generation [Hoogasian and Lijtmaer, 2010; Hoskins and Padrón, 2018]. These communities have extensive experience with health promotion strategies, which have been supported by evidence-based research and preventive health models, such as *promotoras de salud* [Balcázar et al., 2009; Bonilla et al., 2012; WestRasmus et al., 2012]. Learning about the health values and wellness strategies they have used over generations can inform the development of efficient interventions for PILA and its subgroups and related populations. While their health disparities and economic challenges are significant, their ability to survive and thrive despite their history of social adversity is more remarkable. Their resilience is a topic that is well worth investigating.

Traditionally, there are some protective behaviors and practices that have proven effective to ward off negative health outcomes among the mainstream population. However, some of these have resulted in harm to marginalized communities. For example, whereas regular medical check-ups or engagement with social welfare institutions have been effective in the prevention and treatment of physical and mental health problems, the quality of these services has often been lower for communities of color [Estrada, 2009; Alegría et al., 2007]. Moreover, accessing these social benefits has been difficult for many decades now [Satcher, 2000]. Furthermore, some of these communities, such as PILA have been used to test medical interventions or vaccines without their consent, actions that led not only to damage to their health and quality of life but also to a heightened sense of mistrust in public institutions [Cacari-Stone and Avila, 2012; Andrasik et al., 2022]. This history between social service agencies and communities of color has turned engagement with social welfare agencies into a risk factor. For communities with histories of marginalization and discrimination, institutional mistrust has become a protective factor against structural racism [Grills et al., 2022].

Community-Level

There is a growing body of literature that examines protective factors against adverse social conditions in communities of color, especially for Indigenous peoples. For example, engagement with traditional health practices [Harjo, 2019], time spent in nature [Johnson-Jennings et al., 2020] and maintaining supportive conversations with family, friends, or clergy are known to moderate the effect of adverse exposures [Guzmán Gutiérrez et al., 2014; Bonilla et al., 2012; Hoskins and Padrón, 2018; Grills et al., 2022]

Recent studies have indicated that American Indigenous peoples have relied on traditional health services to manage COVID-19 illness and recovery [Grills et al., 2022; Mirzaie et al., 2020]. Findings from the Native American COVID-19 Alliance Needs Assessment (NACA) indicated that almost half (46%) of the study participants who had been exposed to COVID-19 reported using traditional health practices to manage, mitigate, treat, and recover from the viral infection [Grills et al., 2022]. For example, they drank traditional teas (e.g., cedar, bear root, mullein) to relieve their symptoms. A third of the study participants reported using traditional plants or foods to purify the air, nourish themselves, or craft medicinal treatments. Twenty-eight percent smudged, cleansed, or brushed off with smoke or plants (e.g., sweet-grass, cedar, sage) and 27% used root medicines to chew or make into teas [Grills et al., 2022].

Another protective factor passed down across generations is time spent in nature, and natural waters [**?**Fernandez et al., 2020]. For many Indigenous communities, the land remains a central source of wellness and connection, representing a place for healing and a culturally appropriate context in which to conduct wellness ceremonies and health interventions [Grills et al., 2022].

Family-Level

COVID-19 led to many changes in lifestyles. The stay-at-home order not only encouraged (or forced) many to spend more time in their households but also changed the format, quality, and frequency of social exchanges. Whereas some scholars have raised safety concerns for those living with abusive figures [Bradbury-Jones and Isham, 2020], others have explored the potential benefit from the stay-at-home restriction. Several studies have reported that during natural disasters, social bonds and solid familial networks have been known to predict resilience [Gauthier et al., 2021]. This research reports that positive relationships can provide psychological, social, cultural, and spiritual sources of support in times of collective crises [Gauthier et al., 2021; Grills et al., 2022]. Related studies have shown that having at least one stable caregiver can lead to better adjustment during difficult times. This outcome seems to be particularly strong when the caregiver is female, such as the mother or grandmother, who are often perceived as nurturing and

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positive role models [Herrenkohl et al., 2008; Stevens et al., 2015]. Consistent with this finding, related research has shown that, for Indigenous youth, a positive relationship with the mother plays a significant role in developing positive identity and boosting resilient behaviors [Ramirez and Hammack, 2014].

Multi-Generational Households Families are central places where the younger generations are prepared to face life in general and, more specifically, to face life in the society in which they are immersed. Among American Indigenous communities, the grandparents often play a role in transferring cultural memories and skills to the younger generations [**?**]. This process is facilitated in multigenerational households, which are common in PILA [Joo-Castro and Emerson, 2021]. According to [Burr and Mutchler, 1993] when examining health outcomes, "understanding the [status and nature of the average] household of any population is critical because households serve as a platform from which other elements related to individual well-being and the maintenance of life chances are channeled" (p. 55). Complex household structures offer a unique opportunity to examine how the determinants of health, including inequality, neighborhoods, caregiving arrangements, and prosperity management, are leveraged within and across families Burr and Mutchler [1993]. This insight is important for understanding a wide variety of family-related health outcomes.

Individual and Family Level

Individual characteristics can buffer the effect of social adversities such as exposure to DV and child abuse. These characteristics include high intelligence, internal locus of control, positive self-image, and self-esteem [Herrenkohl et al., 2008]. A strong commitment to school or vocational activities has also been shown to decrease the impact of violence, and abuse [Herrenkohl et al., 2008]. Some scholars have found that a resolution to be different from abusive role models can also ameliorate the adverse consequences of such exposures [Herrenkohl et al., 2008]. These contextual protective factors are especially relevant for PILA , for whom family and community have encouraged both enculturation and acculturation processes. Enculturation refers to identifying with, and maintaining, ancestors' values, customs, and beliefs; acculturation is understood as being reared in traditional values but attaining behaviors that are required to function in the mainstream society Garrett [2009].

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3.5 Theoretical Review

According to leading health population scholars that embrace a decolonial perspective, structural and institutional racism are the foundation of the social, economic, and health disparities of marginalized communities [Bailey et al., 2017; Glenn and Tam, 2004], especially of those with histories of colonialism [Estrada, 2009; **?**; Fernandez et al., 2020]. This school of thought posits that structural racism has hindered the ability of PILA to harness political power; as a result they have had reduced opportunities for representation in health policy and decision-making circles [Grills et al., 2022; Power et al., 2020]. Consequently, Indigenous peoples from the Americas have endured more suffering during epidemics, pandemics, and syndemics than the mainstream population, these include higher COVID-19 infection and mortality rates, severe medical complications, and financial setbacks [Curtice and Choo, 2020; de Dios, 2020; Grills et al., 2022].

Next I will provide an overview of the theoretical grounding used to develop the conceptual framework. First, I will outline the main premises of settler colonialism; this will be used as the main framework to examine the impact of COVID19 on PILA in the context of their historical social, economic, educational, and health disparities. Next, I will describe the main theoretical frameworks that have been used to examine health and mental health outcomes in Native American populations, these are the Indigenist Stress and

Coping Model (ISCM) [**?**] and the Multi-Level Framework to Examine [Colonial] Impacts on Individuals, Families, and Communities (MLF-E[C]I-IFC) [Evans-Campbell, 2008]. Both of these models were derived from Historical Trauma Theory, which will also be discussed in this section.

3.5.1 Settler Colonialism

Settler colonialism takes place when the invaders not only sack material wealth, natural resources, and exploit native labor, but also attack with intention to permanently occupy and own the Indigenous land [Grills et al., 2022; Tuck and Yang, 2012]. The European invaders/settlers imposed a hierarchical race-based system to enforce genocidal, ethnocidal, and epistemicidal policies geared toward decimating the native population across the American continent Grills et al. [2022]; León Portilla [2003]. These policies and practices aim to render invisible the cultural identities of the native people [De la Peña, 2006; Sahagun, 1950], and destroy their socio-economic and intellectual legacies [Morales, 1989].

In Latin America, this race-based system of social control awarded the highest social power and privileges to the invaders/settlers and their offspring; a lower status was awarded to those of Mixed race (Indigenous-Spanish, a.k.a. Criollos). The lowest social level of this hierarchy was occupied by non-mixed Indigenous peoples, who were just one level above the enslaved Africans in the social ranking [De la Peña, 2006; Leon-Portilla, 2011]. Although the formal colonial period ended when the settler governments were overthrown from Latin America (between the 1800s and 1900s), most of these countries retained a similar governmental structure, with the Criollos occupying the highest rankings [Medina, 2007; Hernández-Velázquez et al., 2018; Romero Tovar, 2009]. In the United States, a similar power structure took place after the invasion, with the Settlers at the top of the social hierarchy; however, since their government was never overthrown, they never relinquished their power. Instead, they reinforced it through the implementation of systems crafted to ensure their status quo [Batalla, 1996]. Nowadays, their descendants have maintained those systems exerting power at the highest political, social, educational, and economic spheres [Battiste, 2011; Ramirez and Hammack, 2014].

Citizenship & Mestizaje

One salient difference between the colonization of Latin America and that of the United States is that in the latter a hybrid mixed race did not emerge from the encounter between Europeans and Native people, as it did in Latin America. Instead of cohabitating with the native population, they relegated them to restricted zones known as reservations, giving the settlers a more significant advantage over the land and its natural resources; this racial segregation strategy was used to control the native population and to thwart their cultural, socio-political, and economic development [Batalla, 1996]. In the case of People of Latin American ancestry in the United States (PILA), and especially of Individuals of Mexican Ancestry (IMA), one settler-colonial strategy used to maintain this group in the lower rank of the socio-economic ladder, is the notion of "otherhood." By clearly labeling Americans from south of the United States as the "other," as "foreigners," the message of not belonging was clearly stated; therefore it was understood that -as foreigners- they did not have the same civic and constitutional rights as the legitimate citizens did [Glenn and Tam, 2004].

For PILA , but especially for IMA-US, the conception of being "foreigners in their own land" presents many complexities. PILA are the direct descendants of the native groups in the American continent; according to archival documents and the oral tradition, the mobility of the ancestors was not constrained by current political boundaries. This migration pattern has been discussed in mtDNA [2] studies, these show that

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[2] Mitochondrial DNA tests trace people's matrilineal (mother-line) ancestry through their mitochondria, which are passed from mothers to their children.

the same maternal lineages of those with American Indigenous ancestry are found all across the American Continent [Kumar et al., 2011]. Another explanation for this is traditionally when a women was married, she could not return to her tribe, therefore women more likely to move across geographical areas. Currently, many native American groups report having families and close nexus with other Indigenous communities across the Americas. However, many of them are unable to maintain or nurture those relationships due to the homeland security policies.

For IMA-US, the issue of citizenship is a controversial topic, because many of their ancestors occupied approximately half of the current-United States territory thousands of years before it became a republic (1776). Soon, after México overthrew the Spanish Crown (1821), the United States invaded México, taking away almost half of their territory (the Southwest), whereas this government first promised full citizenship to the occupants of that land, later it relegated the original inhabitants of that territory as second-tier citizens. Later, these dwellers of the Southwest were displaced through broken treaties; all-together the colonial policies and practices from the US-Mexico War resulted in the formal conversion of Mexican nationals into foreigners of their own land, and often into laborers on their prior properties Zentella [2004].

According to Grills et al (2022), addressing racism without addressing settler colonialism is a way to perpetuate the same pattern of a failed racial justice agenda, in which efforts to enforce civil rights are made without interrupting settler colonial structures. In order to create lasting change, the system must not only increase the representation of racial minorities in health policy, but it must also bestow upon them decision-making power [Grills et al., 2022]. However, in many countries, the social conditions and racist ideology embedded in welfare institutions and the societal fabric has remained unchanged since colonial times. Grills et al (2022) indicate that when studying communities of color (CoC), the use of a settler-colonial framework is critical. Because this framework provides theoretical and methodological tools to investigate how racial structures have been "strategically employed to consolidate the settler state, augment settler class power and wealth, and create racialized "others" in service of the settler class." According to Grills et al (2022), not examining the histories of the CoC contributes to the erasure of their original identities, and it "perpetuates narratives that deny and disavow settler colonial violence that, in turn, frees future generations from accountability" [Grills et al., 2022] and blocks current Indigenous youth from discovering their authentic sources of strength and ancestral power.

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Chapter 4

Methods Notes by Araceli Orozco Hershey

Survey Data

This dissertation uses a subset (n=350) of data from a parent study, the *Native American COVID-19 Alliance Needs Assessment (NACA)*. The purpose of this cross-sectional survey was to identify and report Native American COVID-19 experiences, needs, and resiliencies during the pandemic. NACA is one of the largest national studies (N=8,549) conducted to date by and for Native American Peoples of the Américas residing in the United States [IWRI, 2020]. The recruiting phase included sending the survey link to approximately 20,000 people, including more than 50 Native American organizations, over 75 tribes, 60 universities, including tribal colleges and Native student organizations, and a half-dozen media outlets [IWRI, 2020]. The assessment was conducted online between January 18 and March 19, 2021. Eligibility to participate included being 18 years or older and identifying as Indigenous or a combination of the following identities: Native American, American Indian (AI), Alaskan Native (AN), First Nations, Métis, or Inuit (FN), Native Hawaiian (NH), Pacific Islander (PI), Mexican Indigenous, or Hispanic-Indigenous [IWRI, 2020]. For this present study (n=350) eligibility included anyone who identified as being of Indigenous descent and identified from Mexico, Central or South America alone or in combination with other Indigenous or racial/ethnic ancestries (e.g., Mayan and White; Ayamara and African American, etc.).

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Recruitment and Data Collection

The assessment was sent to IWRI's partner organizations, reaching approximately 20,000 people. These organizations included more than 50 Native institutions, over 75 tribes, 60 universities (including tribal colleges and Native student organizations), and a half-dozen media outlets [IWRI, 2020]. The survey was administered online using the Qualtrics platform [Sontam et al., 2020]. The duration of the survey was approximately 20-25 minutes. The data collection phase was carried out between January 18 and March 19, 2021 [IWRI, 2020].

Inclusion Criteria

Selected respondents fulfilled the following characteristics: they were adults 18 years old or older and self-identified as having Latin American ancestry. This ancestry could include Native American, American Indigenous, mixed-Indigenous, Indigenous from México, Central, or South America. Others identified as having both Hispanic and Indigenous ancestry. A small group (n=40) identified as Indigenous Mexican people; these groups include foreign and US-born individuals.

Measures

The dataset incorporates questions from several areas. The first area includes demographics (e.g., age, gender, level of education, income, employment status, partner status, housing situation, etc). The second covers social conditions and physical and mental health status apriori during the pandemic. Some of the variables in this group include food security, sources of stress, physical health status, and comorbidities, mental and behavioral health (e.g., depression, anxiety, substance use and dependence, isolation, exercise routines, sleep patterns, etc). The third includes variables related to specific health behaviors (traditional and nontraditional) and coping responses used again before and during the pandemic. The final area examined in this paper includes COVID-19-related questions, such as exposure/diagnosis and impact to self and family, access to traditional and western health care, vaccination status, and access/or disruption to healthcare services and medications [IWRI, 2020].

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Chapter 5

PILA INFO by Araceli Orozco Hershey

5.1 Census Issues and PILA Taxonomy

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Historically, the U.S. Census has encountered challenges in accurately measuring racial and ethnic identities. This challenge is particularly relevant for the "*Hispanic population*" [Hirschman et al., 2000; Portes and MacLeod, 1996; Schut, 2021; Taylor et al., 2012; Gonzalez-Barrera and Lopez, 2013; Smith and Bradshaw, 2006]. When filling Census forms or selecting their identity in forms by official agencies, people of Mexican, South American, and Central American ancestry lack clarity on which identity to select. This task is especially difficult for individuals of Native or Mixed ancestry. Since their identities are not well-represented in the census, they must choose among multiple identities; often settling for the closest match [Hirschman et al., 2000; Portes and MacLeod, 1996; Flores and Román, 2009; Smith and Bradshaw, 2006; To et al., 2023]. Recently, the Census Bureau has been updating census categories to meet the needs of Hispanic individuals whose identities are not well represented in the census, especially for those with Native or mixed Native-ancestry [Smith and Bradshaw, 2006; Forbes, 1990; Hirschman et al., 2000]. Before 2000, *PILA* were classified under the Hispanic or Latino/a census categories. However, due to growing migration from People of Indigenous Latin American Ancestry relocating to the United States for the first time [Zúñiga et al., 2013; Fox and Rivera-Salgado, 2004], the Census Bureau introduced the category of *"Hispanic-Indigenous"* to account for this demographic shift. This cohort has been rapidly growing, now making the fourth-largest Native American community in the United States [Fernandez, 2019]. Nowadays, people with both Latin American and Native ancestry are officially categorized under the overlapping categories of"*Hispanic and Hispanic-Indigenous.*"

Leading Native American population health scholars at the *Indigenous Wellness Research Institute (IWRI)* at the University of Washington School of Social Work argue that the terms "*Hispanic and Hispanic-Indigenous"* may be overlooking a significant bond between the multi-national ethnic communities grouped under these categories: their Native American origin. These scholars explain that many of these communities do not speak the Spanish language or embrace the Hispanic culture and values. Their extensive empirical research indicates that cultural mismatches in healthcare interventions could result in no behavioral change or, worse, iatronic outcomes [citations]. From a methodological perspective, combining this multi-ethnic and place-based taxonomy with the geographical census information could offer a path to create structural responses to these communities' chronic and structural health disparities. PILA, an inclusive population-based classification, offers public health officials and epidemiological researchers opportunities to track multi-modal distributions of wellness and disease among these communities. This information can provide a more nuanced geo-social awareness to quickly identify the spread of communicable and non-communicable diseases among vulnerable populations. It also provides opportunities to identify their counterparts in clusters with low disease rates. By combining both sources of information, researchers can develop more geographically responsive, epistemological, and culturally congruent public health interventions, norming the outcomes on the actual distribution of each community rather than on an average while trying to generalize across groups with different historical backgrounds, such research fails to be relevant to any individual group because such an average is the result based on a statistically miss-specification of studies lacking solid theoretical and methodological sophistication to capture heterogeneity. Therefore, PILA promises also to advance health and historical justice.

The researchers at IWRI indicate that PILA could provide this missing identity link shared across all Native American communities. The reclassification from *Hispanic-Indigenous to PILA* detaches also advances the racial justice mission put forward on the Grand Social Work Challenges by fighting against Indigenous erasure. It has been well-established across many disciplines that the most crucial part of identity starts with the name. The acronym PILA detaches from the semantics reflecting the colonizer's language, identity, and values, which are foreign to many people in these communities. Instead, reinforces the bond among Latin American communities by reconnecting their name and identity to their genealogical root, the Pueblos Originarios [1] [Hoskins and Padrón, 2018]. This pre-assimilation identity has been long subjugated due to colonial influence at the institutional level. However, the increased participation of Native scholars in the public health discourse results in a large body of literature advocating for the reclamation of Native ancestry and the revitalization of their ancestral cultures [your citations].

The scholars at IWRI recognize that the proposed nomenclature (PILA) presents some of the same challenges as the Hispanic-Latinx category, grouping many ethnic groups with unique languages, epistemic traditions, socio-political backgrounds, and cultural and medicinal practices into one category. However, unlike these terms, which fix numerous and highly diverse nations into a monolithic group, PILA provides a path for tracing multiple racial and ethnic identities and geographical histories. The acronym PILA serves as a core system to acknowledge the origin story shared across North, Central, and South American groups, making explicit their Indigenous bond and legacies. However, since these groups are diverse, the acronym can be customized to represent multiple racial, ethnic, and place-based identities. For example, someone could identify as PILA Maya de Mexico, PILA Maya de Guatemala, PILA Mapuche de Argentina, PILA Otomi de Queretaro, PILA Apache de California, PILA Purepecha de Washington or even PILA Filipina de Washington or PILA Peruana de Francia. The acronym PILA can also unite some subgroup identities often overlooked in this population, such as Black and White PILAs. These subgroups often face official challenges to identify with their true identities and social challenges. They may feel unable to reclaim their Latin American and Native origins due to their phenotype. A body of literature reports that these groups report feeling pushed out of their cultural heritage even though they may share similar cultural traditions, beliefs, values, or experiences that unite them with the Indigenous Peoples of Latin America. However, these individuals acknowledge, significantly White PILAs, that their living conditions and social experiences may differ widely from Indigenous and mixed-Native and Black communities due to their white privilege.

The proposed multiple-identity population-based taxonomy system, PILA, accounts for differential contextual experiences among these groups and within the broader Hispanic population. First, by disaggregating Native and Mixed-Native from White-Non-Native individuals, this multi-level population category provides solace to those who want to detach their identity and experience from their colonial past. The proposed reclassification also promises to advance health justice for these communities. The dominant health research

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[1] Broadly speaking, Pueblos Originarios refers to human groups who inhabited the continent prior to the arrival of the colonizers [Montenegro and Stephens, 2006; Brave Heart et al., 2011], and the descendants from these pre-contact cultures that have preserved some or most of their language, cultural, social, economic, and medicinal systems and live in their ancestral communities [De la Peña, 2006; Evans-Campbell, 2008; Kumar et al., 2011]

for this segment of the population, the largest, youngest, and most diverse minority group in the country, has historically yielded mixed findings. Methodological experts have argued that such research is fraught with theoretical and methodological misspecifications. Two main challenges have been proposed as mechanisms leading to mixed findings. The first is the use of Eurocentric or Anglocentric perspectives and health standards to examine the experiences of communities with histories of White assimilation and resistance against the imposition of colonial language, culture, and identities. The second one is related to the assumption of heterogeneity of this highly diverse population. By disaggregating and ranking multiple within and between the Hispanic groups, a more nuanced understanding of their contemporary experiences and the social and historical factors shaping their health predispositions, behavioral patterns, and the context of their natural and built environments is achieved.

a Native American scholars expect that more people from the Hispanic group will identify with their Native origin now that there is a choice for this identification in the Census and as the research movement advocating to reclaim Native identity, values, and culture continues to bring awareness of identities suppressed over hundreds of years of colonial rule [Fernandez et al., 2023; To et al., 2023; Brave Heart et al., 2011]. Moreover, new evidence is emerging indicating that a large number of Latin American people believed to be of Mixed-ancestry are, in fact, of Native American origin [Kumar et al., 2011]. Recently, new evidence has emerged indicating that the percentages of Latin American people with Native origin, on average, range from 30 to 60 percent in the countries with the largest Native representation, such as Mexico, Peru, Guatemala, and Bolivia [Kumar et al., 2011].

In the post-colonial era, the percentage of people in Mexico, Central, and South America self-identifying as Native was significantly greater than current estimates; however, when the Census started collecting information on Native identity, many Native individuals lost their ability to claim such heritage [Eisenstadt, 2011]. The decline of Indigenous representation in official demographic reports has been partly attributed to the requirement to speak a Native language to qualify as Native. This policy seems to omit the fact that many of these communities were forcibly assimilated into the Hispanic culture by imposing the Spanish language through the public education system [Eisenstadt, 2011]. While many of these communities lost their Native languages, they still retain their oral and other ancestral traditions, beliefs, and lifestyles; however, they cannot officially claim their original identities [Eisenstadt, 2011].

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Chapter A

Appendix One

A.1 Appendix section 1

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Table A.1: Table in the Appendix